

ABSTRACT OF THE DISCLOSURE

The present invention describes the use of molecular expression profiles in the primary screening of compounds for pharmacological activity. By characterizing a profile of expression levels of a number of distinct biological molecules for a given sample type derived from living matter, a characteristic fingerprint of that sample type can be established. This process is conducted for two distinct sample types (A and B) that differ by some relevant parameter, in order to characterize the difference between the two types in terms of expression profile. Following this, one of the types (B) is treated with an analyte of unknown activity relative to the parameter by which the sample types differ. The expression profile of treated B is then measured and compared with the expression profiles of A and untreated B to ascertain whether the analyte has induced a shift in the profile of B to more closely or more distantly resemble the profile of A in some meaningful way. Analytes that induce a shift in the molecular expression profile of sample B toward or away from the profile of sample A can be classified as candidate pharmaceutical agents relative to the parameter by which A and B differ. This method can be conducted in high-throughput fashion.